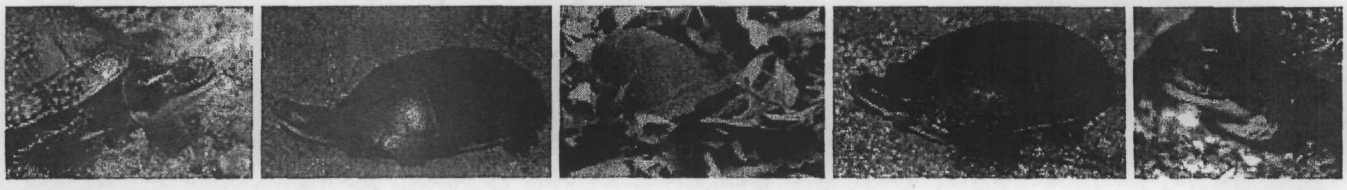
Emydoidea blandingii
(Blanding's turtle)



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By Sarah Kipp

Kingdom: Animalia
Phylum: Chordata
Subphylum: Vertebrata
Class: Reptilia
Order: Testudines
Family: Emydidae
Genus: Emydoidea
Species: **Emydoidea blandingii**

Geographic Range

Blanding's turtle is found in a fragmented range extending from southwestern Quebec and southern Ontario west to Minnesota and Nebraska and south to central Illinois. The Great Lakes region is currently a stronghold for this species (Harding 1997).

Biogeographic Regions: nearctic (native).

Habitat

Blanding's turtle is found in and around shallow weedy ponds, marshes, swamps, and lake inlets and coves most of the year. They prefer slow-moving, shallow water and a muddy bottom with plenty of vegetation (Harding 1990).

Terrestrial Biomes: forest.

Aquatic Biomes: lakes and ponds.

Physical Description

Blanding's turtle is a medium sized turtle with a carapace length ranging from 15.2 to 27.4 cm. This semi-aquatic turtle has a moderately high, domed carapace. It is elongate and smooth, lacking keels or sculpturing. The carapacial scutes display distinct growth annuli most prominently seen in juveniles. Coloration between individuals is highly variable. The carapace is black or gray with any variation of scattered light yellow or whitish flecks or dots. The light spots and flecks predominate in some individuals while others are almost solid black. The plastron is yellow in color with a dark blotch in the outer corner of each scute, and has a V-shaped notch near the tail. In males, the plastron is moderately concave while females posses a flatter plastron and a narrower tail. Blanding's turtles have a hinge located between the pectoral and abdominal scutes, which allows for partial closing of the plastral lobes. The hinge may be practically non-functional or nearly as effective as that of the box turtle (Terrapene). The head of this turtle is rather flat with a short, rounded snout. This turtle lives its life with a permanent "smile" due to the notch in its upper jaw. As with the carapace, the top and sides of the head vary in coloration from black, brown, or olive with yellowish spots or mottling. Contrasting greatly with the rest of the turtle, the chin, throat, and underside of the long neck are bright yellow. The hatchlings of this species have a gray, black, or brown carapace that is 3 to 3.5 cm long. A single light spot is seen in the center of each scute. The plastron has a central black blotch outlined in a yellowish color and the plastral hinge is not yet functional. The immature turtles are often more brightly marked than the adults and possess a proportionately longer and thinner tail (Harding 1997).

Some key physical features: ectothermic ; bilateral symmetry .

Reproduction

Blanding's turtle reproduces through internal fertilization with copulation taking place in the water. Mating can occur between April and November but is most concentrated in April and May. Less than half of the adult female population will reproduce in a give year. Mostly in June, females may travel considerable distances from the water to find suitable nest sites to lay their eggs. They prefer open, sunny spots in well-drained but moist sandy soil, but when lacking preferred areas, lawns, gardens, or gravel road edges will be used. The female digs a nest cavity approximately 17cm deep and 7 to 10 cm in diameter at the mouth using alternating movements of the hind feet. She will lay 6 to 21 flexible, elliptical shaped eggs measuring about 3.6 cm long. Most hatchlings will emerge 50 to 75 days later, depending on the temperature and moisture in the nest, in August or early September. Because Blanding's turtles have temperature-dependent sex determination, eggs incubated below 25oC produce nearly all males and those incubated above 30oC are nearly all females. The nest must first remain free of any predator attacks and then hatchlings must often travel a considerable distance to reach suitable aquatic habitat. Since few young are ever encountered in the wild, it is presumed that the hatchlings are extremely unlikely to survive the initial weeks away from the nest. This long-lived turtle will reach sexual maturity in 14 to 20 years and reproduce for approximately the next 40 years of its life. Although Blanding's turtles generally reach 60 years of age some individuals may live to be up to a century old (Harding 1997, Harding 1990).

Key reproductive features: gonochoric/gonochoristic/dioecious (sexes separate).

Behavior

Mating activities begin when a courting male approaches a female, quickly mounts her carapace, and clasps its edges with his claws. To keep the female withdrawn, the male either bites at her head and forelimbs or presses down on her snout with his chin. The male may also swing his head back and forth or up and down over the female's head or blow a stream of bubbles across the top of her head. The pair will either sink to the lake bottom, float near the surface, or hang on to vegetation until fertilization is complete.

Blanding's turtles, like most other turtles, emerge to bask on sunny days. Basking sits include logs, grass clumps, sloping banks, or high perches near the water. Although this turtle is quite tolerant to cold, the summer heat may restrict its activities to early morning and evening or possibly a more nocturnal lifestyle. In the event of their habitat drying up some individuals will opt to migrate to new bodies of water while others simply burrow into the mud and aestivate until conditions improve. Blanding's turtle generally hibernates from late October until early April, but quite often it can be seen moving slowly below the ice.

Turtle eggs and hatchlings have a variety of predators to which they have virtually no defenses. Raccoons, skunks, and foxes are the major predators on the eggs, but they also prey upon the hatchlings and juveniles. Other predators to the young include large fish, frogs, snakes, wading birds, and crows. Adult turtles depend on their shells for protection on land and in the water rely on their strong swimming abilities to either escape to deeper waters or conceal themselves on the bottom. Rarely will the Blanding's turtle bite as a defense. It is an extremely gentle organism that can rarely be induced to bite (Harding 1997, 1990).

Key behaviors: motile.

Food Habits

Blanding's turtle is an omnivore. Its favorite food items are crustaceans but they also feed on insects, leeches, snails, small fish, frogs, and occasionally some plants. Food is captured with a rapid thrust of this turtle's long neck, similar to the feeding actions of the snapping turtle (*Chelydra*). Feeding mostly occurs underwater and food seized on land is generally carried to the water for swallowing. Prey is either swallowed whole or if it is too large it is held by the jaws and shredded into smaller pieces by the front claws (Harding 1997).

Conservation Status

Future survival of Blanding's turtle populations mainly depends on the condition and availability of wetland habitats. This species has been given legal protection in certain states. In the lower Great Lakes basin, however, they appear to be maintaining populations. As with many other species that must migrate to suitable nesting locations, fragmentation caused by roads results in the death of many turtles every year. Because this species is slow-maturing, juvenile as well as adult survivorship must remain high to ensure this species' survival (Harding 1990, 1997).

Other Comments

Although Blanding's turtle is now placed in relation closer to the European pond turtle (*Emys obicularis*) and the box turtle (*Terrapene*), it was once thought to be most closely related to the chicken turtle (*Deirochelys*). This proposed relationship was considered to be due to similarities in the skull and neck vertebrae of the Blanding's and chicken turtles, as well as similar feeding habits (Harding 1990).

Contributors

Sarah Kipp (author), Michigan State University: February, 2000.
James Harding (editor), Michigan State University: February, 2000.

References

Harding, J. 1990. Blanding's Turtle, Emydoidea blandingii. *Tortuga Gazette*, 26(1): 3-4.

Harding, J. 1997. *Amphibians and Reptiles of the Great Lakes Region*. Ann Arbor: The Universtiy of Michigan Press.

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